THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 27

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte YOSHIYUKI YOKOMACHI and KAZUKI MURATA

Appeal No. 1997-4446
Application No. 08/278,151

HEARD: March 7, 2000

Before KRASS, BARRETT, and GROSS, Administrative Patent Judges.
GROSS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1 through 10, 19 through 40, and 47. Claims 11 through 18 and 41 through 46 have been withdrawn from consideration as directed to a non-elected species.

Appellants' invention relates to a rotary head type magnetic recording/reproducing apparatus with a dynamic tracking system. In particular, the tracking system detects a

relative position error signal of one magnetic head with respect to one track, stores a control signal indicating the amount of displacement of an actuator corresponding to the one magnetic head, and drives a second actuator according to the control signal to track a second head associated with the second actuator. Claims 1 and 25 are illustrative of the claimed invention, and they read as follows:

1. A rotary head type magnetic recording/reproduction apparatus having a function of reproducing a main signal from a plurality of tracks having a plurality of pilot signals of different frequencies recorded to be superimposed sequentially on the main signal for every other track, said rotary head type magnetic recording/reproduction apparatus comprising:

a rotary drum;

a plurality of actuators attached on a circumferential face of said rotary drum with a constant distance therebetween, each of said plurality of actuators being displaceable in a track width direction;

a plurality of magnetic heads attached to said plurality of actuators in a one-to-one correspondence;

means for detecting a relative position error signal of one magnetic head out of said plurality of magnetic heads with respect to one track out of said plurality of tracks according to said pilot signal components included in a signal reproduced from said one track by said one magnetic head;

first control means for generating a control signal indicating an amount of displacement of one actuator corresponding to said one magnetic head out of said plurality of actuators, and for driving said one actuator so that the

value of said relative position error signal approaches zero by closed loop control according to said detected relative position error signal;

storage means for temporarily storing the control signal; and

driving control means for driving another actuator out of said plurality of actuators according to said stored control signal, for tracking another head, operatively associated with said another actuator, along a track.

25. A method for controlling the tracking of a plurality of heads in a recording/reproduction apparatus, comprising the steps of:

(a) providing relative movement between a first head and a first data track;

(b) detecting a relative position error signal of the first head with respect to the first data track;

(c) generating a control signal for altering the position of the first head so that the value of the relative position error signal approaches zero;

(d) temporarily storing the control signal for later use in controlling a position of a second head;

(e) controlling the position of the second head in accordance with the stored control signal.

The prior art reference of record relied upon by the examiner in rejecting the appealed claims is:

Yamashita 4,924,325 May 08, 1990

Claims 8 and 10 stand rejected under 35 U.S.C. § 112, first paragraph, as being non-enabled by the disclosure.

Claims 1 through 7, 9, 19 through 40, and 47 stand rejected under 35 U.S.C. § 103 as being unpatentable over Appellants' Admitted Prior Art in view of Yamashita.

Reference is made to the Final Rejection (Paper No. 14, mailed January 11, 1996) and the Examiner's Answer (Paper No. 21, mailed December 11, 1996) for the examiner's complete reasoning in support of the rejections, and to appellants' Brief (Paper No. 20, filed September 11, 1996) and Reply Brief (Paper No. 22, filed February 11, 1997) for appellants' arguments thereagainst.

OPINION

We have carefully considered the claims, the applied prior art references, and the respective positions articulated by appellants and the examiner. As a consequence of our review, we will reverse the enablement rejections of claims 8 and 10 and also the obviousness rejection of claims 1 through 7, 9, 19 through 40, and 47.

The examiner asserts (Final Rejection, page 5) that claim 8 is not enabled by the specification because "no elements are

provided to perform the ramp signal adding operations. Applicant has not identified any block in Figure 9 as acting as a ramp adding means." The examiner further states (Answer, page 4) that it "is unclear how the staircase waveform actually receives the ramp signal." The description must enable one skilled in the art to make and use the claimed invention, but "[a]n inventor need not, however, explain every detail since he is speaking to those skilled in the art." In re Howarth, 654 F.2d 103, 105, 210 USPQ 689, 691 (CCPA 1981). Furthermore, one should not underestimate the level of the skilled artisan. See In re Sovish, 769 F.2d 738, 743, 226 USPQ 771, 774 (Fed. Cir. 1985). As pointed out above, claim 8 is directed to the addition of a ramp signal. The skilled artisan clearly knows how to add signals. Accordingly, the means for adding the ramp signal need not be disclosed. Therefore, we cannot sustain the enablement rejection of claim 8.

Regarding claim 10, the examiner states (Final Rejection, page 5) that

> [f]or the offset compensation limitations, applicant argues that microcomputer 62 may be programmed to carry out a process by which a rectangular waveform is added to the control signal. This operation is not depicted in Figure 9. It would not necessarily be obvious to one of ordinary skill in [sic, the] art.

The examiner concludes that the specification fails to enable claim 10. In the Answer (page 4), the examiner continues that "the specification does not explain how the offset compensation signal is derived. The disclosure never describes how the measured value of page 17 is converted into the offset of page 27." As pointed out by appellants (Brief, page 17) the specification clearly indicates on page 28 that the microcomputer may be programmed to calculate from measurements of height differences (described on page 17 of the specification) the amount of offset for the rectangular waveform shown in Figure 10(e). Although the specification does not detail the particular calculation, we agree with appellants that such would be well within the level of one of ordinary skill in the pertinent art. Again, one should not underestimate the level of the skilled artisan. See id. Accordingly, we cannot sustain the enablement rejection of claim 10.

As to the obviousness rejection, in a rejection under 35 U.S.C. § 103, it is incumbent upon the examiner to establish

a factual basis to support the legal conclusion of obviousness. See In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the examiner is required to provide a reason from some teaching, suggestion or implication in the prior art as a whole, or knowledge generally available to one of ordinary skill in the art, why one having ordinary skill in the pertinent art would have been led to modify the prior art to arrive at the claimed invention. Uniroyal, Inc. v. Rudkin-Wiley, 837 F.2d 1044, 1052, 5 USPQ2d 1434, 1438 (Fed. Cir. 1988), cert. denied, 488 U.S. 825 (1988). These showings by the examiner are an essential part of complying with the burden of presenting a prima facie case of obviousness. Note In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

Claims 1 through 7, 9, 19 through 40, and 47 all require storing a control signal indicating the amount of displacement of one actuator of a magnetic recording/reproduction apparatus and driving a second actuator according to the stored signal.

In rejecting the claims over Appellants' Admitted Prior Art (AAPA) in view of Yamashita under 35 U.S.C. § 103, the examiner recognizes (Final Rejection, page 6) that AAPA does not store the actuator control signals. Therefore, the examiner turns to Figure 7 of Yamashita, asserting that D/A converter 35 receives a signal from RAMs 44 and 45. From this the examiner concludes (Final Rejection, page 7) that

> it would have been obvious to one having ordinary skill in the art to have applied Yamashita's teachings to AAPA. The motivation for this modification would have been to adapt the closed loop AAPA operation to a plurality of actuators. As stated by Yamashita on lines 60-64 of column 2, this combination would record signals with high fidelity, maximize read back output, and increase tolerance for slight differences in components.

However, the examiner has not provided a reason from some teaching, suggestion or implication in Yamashita or the prior art as a whole why one having ordinary skill in the pertinent art would have been led to modify AAPA to arrive at the claimed invention.

As explained by appellants (Brief, pages 20-21) Yamashita is directed to obtaining an ideal supply voltage signal which will yield the maximum reproduction output for a single head. Yamashita determines the best supply voltage signal by

repeatedly applying a supply voltage signal from memory, controlling the head position, obtaining a new tracking error signal, and storing the improved supply voltage signal until the process converges to a tracking error shift of zero. When the ideal supply voltage signal is found, it is written in the ROM of the device. Yamashita does not utilize a supply voltage signal obtained for one head for driving a second head. The portion of column 2 of Yamashita referenced by the examiner as a motivation to combine is directed to reasons for determining an appropriate signal for a single head, but not for applying the obtained signal to a second head. Therefore, Yamashita cannot suggest modifying AAPA to use the control signal obtained for a first actuator to drive a second actuator.

The examiner argues (Answer page 4) that

> the skilled artisan would look to Yamashita because the AAPA closed loop control system is expensive. By applying an open loop system as taught by Yamashita to a second head, using the accurate closed loop signals from the first head, provided by AAPA, the overall system would have reduced cost compared to AAPA with two closed loops for two heads.

However, there is no teaching or suggestion in the art to use the closed loop of AAPA and apply the resultant control signal to a second head. Yamashita makes no reference to the relationship between two actuators or heads during operation of a magnetic recording reproduction apparatus. Yamashita merely teaches a converging process for determining a supply voltage signal for a single head during manufacture. Thus, the examiner's motivation for modifying AAPA to arrive at the claimed invention clearly is not suggested by the prior art, but rather must come from appellants' own disclosure. "Obviousness may not be established using hindsight or in view of the teachings or suggestions of the inventor." Para-Ordnance Mfg., Inc. v. SGS Importers Int'l, Inc., 73 F.3d 1085, 37 USPQ2d 1237, 1241 (Fed. Cir. 1995), citing W.L. Gore & Assocs., Inc. v. Garlock, Inc., 721 F.2d 1540, 1551, 1553, 220 USPQ 303, 311, 312-13 (Fed. Cir. 1983). Accordingly, the examiner has failed to establish a prima facie case of obviousness, and we cannot sustain the obviousness rejection of claims 1 through 7, 9, 19 through 40, and 47.

CONCLUSION

The decision of the examiner rejecting claims 8 and 10 under 35 U.S.C. § 112, first paragraph, is reversed. The decision of the examiner rejecting claims 1 through 7, 9, 19 through 40, and 47 under 35 U.S.C. § 103 is reversed.

REVERSED

ERROL A. KRASS Administrative Patent Judge	)	
LEE E. BARRETT Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
ANITA PELLMAN GROSS Administrative Patent Judge	)	

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